2. Supervise and control internal affairs.
3. Appoint other needed employes except attending M. D.'s.
4. Keep records and accounts.
5. Receive patients from health district (or from without, under special conditions).
6. Determine ability of patient to pay and regulate charge accordingly (unpaid cost of maintenance to be a charge on the district).
7. Keep records of patients' treatment and care.
8. Discharge patients.
9. Collect moneys due the Center and keep records thereof.
10. Give a bond before entering on duties.

(Nothing shall be construed to repeal, alter or amend municipal law in cities in re: hospitals. Existing health centers shall continue to function, and state aid may be given with approval of State Health Commissioner. Sub-centers may be established.)

State Aid:

1. For hospitals, half of cost; not to exceed $750 per bed, and not to exceed one bed to five hundred population.
2. Seventy-five cents per day per free patient.
3. Grant for each clinic half of cost; not to exceed $5000 per clinic.
4. Grant for treatments at half cost; not to exceed 20 cents per capita.
5. Grant for laboratories half cost maintenance; not to exceed $3000 per year for each laboratory, and $1500 per year toward initial cost.
6. Grant 10 cents per capita per year towards salaries of deputies in districts less than 1500 population. Five cents per capita per year in districts of 1500 to 3500 population (in addition to salaries from treasury).

No state aid in excess of above amounts where districts have more than 50,000 population if more than one center to each 50,000 population. No grant hereinbefore provided for shall be given to institution established at passage of this Act, except clinics for maternity care, children, tuberculosis and venereal disease.

Salaries and expenses of experts paid from maintenance funds.

Work of center inspected and standardized by State Health Department.

Provision for periodical consultations and clinics by specialists.

Center laboratories under supervision by director of State Laboratory Service.

Dr. Billings, in a recent article, refers to the New York law as not giving sufficient consideration to the welfare of the medical profession. I believe that this could be overcome very easily by the underwriting of the clinical work of the health centers by the organized medical profession and the payment of salaries to the men while on duty there. The demand for the diagnostic resources for the health center should never interfere with the doctor's personal relation to his patient whether that patient pays him a fee or not. The crux of the whole situation is absolutely dependent upon the maintenance of the relation between the doctor and the patient.

SUMMARY

The past is to be regarded historically, merely that we may estimate the extent and rate of progress.

In the interests of all concerned, better medicine must be practiced and more prevention.

The medical profession must ally itself with the state against the loose handling of half the job and interference with the handling of the other half.

It is better that the profession guide the state in this matter than that the state exploit the profession. In the one case the state can encourage the high standards of medicine and make available its every resource to the people, and enable even the country practitioner to keep abreast of all progress, while in the other the state farms out the care of its ill-paid citizens to anyone who will compete for the job. Under such a plan there is no incentive to progress among doctors, and one more item in the family budget can be stabilized by reformers, one less incentive to attain a better level is removed, and society brought a bit nearer the machine-made and spiritless existence of the pacifist's dream.

The state and county subsidized health center is not a perfect solution to the problem of ideal medicine, but it will go a long way to bring the best that medicine affords into far more homes than now enjoy it, and lighten materially the burdens on the profession. It will establish in the whole community wholesome influences against the vicious propaganda of the quack and the patent medicine vender, it will take post-graduate teaching to the doctor who cannot leave his community to get it, and in the end it will be a decidedly educational influence for better health, better standards and better support of medicine by the people, with fewer inroads from the pseudo sciences.

NEUROLOGICAL FINDINGS IN ONE THOUSAND GROUP STUDY CASES

By THOMAS G. INMAN, M. D., San Francisco, Cal.

In the practice of medicine a large portion of the medical man's duties consists in the making of the diagnosis. Indeed, there are members of the profession who openly state that this is the most important part of medical practice, and thus there has arisen in recent times specialization along the line of diagnosis and consultants, and diagnosticians have been accepted as justifiable adjuncts to the medical body. As if in answer to the question, "What ails the patient?" there has arisen a great list of names in medical nosology, each of which is supposed to stand for a definite clinical entity, and the art and science of diagnosis are directed upon the search for a combination of symptoms and findings to which one of these names may be given. This system does very well for those diseases which make their presence known by specific symptoms, run characteristic courses, produce definite effects upon the body and cease their activities by one or another of the possible terminations. Of such are the diseases of infectious origin, the specific poisons, certain defects in organ functioning, and the like. But the aid of the physician is frequently sought for the relief of symptoms which cannot by any manner of means be charged to the effect of any single condition. Different organs of the body may be involved, often producing reactions in one case entirely out of proportion to the amount of pathology present; in another, showing abundant pathology without the presence of any symptom pointing directly to the system involved. The chronically sick individual often presents definite dis-

ease in several apparently dissociated parts of the body, and it is often very difficult to give to each its proper measure of blame in the production of symptoms. Viewed from the angle of the physician trained in one special field, the case presents quite a different aspect from that seen by a physician whose training has been along different lines. It is to this fact that Sir James Mackenzie[2] referred when he stated that, "When a person falls ill nearly every organ of the body may be disturbed and each specialist has no difficulty in detecting symptoms belonging to his particular branch. In consequence of this we find that confusion of diagnoses which results when a patient consults a number of specialists."

It is now nearly six years since Dr. Fayette Watt Birtch began the development of a plan having for its object the complete examination of patients and the recording and accumulation of the observed data. A number of men, specializing in the different branches of medicine, allied themselves with him and set to work upon the formation of a scheme whereby patients presenting themselves for examination could be viewed from the angle of the various specialists and the results correlated by consultation *en banc* by the assembled members. Since the services of the members were given gratuitously, all moneys derived from patients being used for the purchase of apparatus and the payment of technical assistants, the method was known as Group Study. This name has been retained, and in its essential features is different from Group Practice, in which the main interest lies in the business part of the organization.

It has been pioneer work, and had the numerous difficulties which beset the thorny path been visible from the first, the attempt would never have been made. But to those who, even in these commercial times, still believe that ideals come before monetary considerations, and that the practice of medicine is a profession and not a business, the ends achieved have warranted the collective effort put forth. It is with the intention of bringing to your notice a few observations gathered from Group Study that this report is made.

The occasional need for this type of medicine has been well expressed recently by Sir Henry Morris[1] as follows: "The development of medical and scientific knowledge brings into use improved material means of investigating and treating disease, which are incompatible with the old exclusively personal relations between doctor and patient."

The time has long since passed when any one mind can know all there is to know of even the practical side of medicine. Information furnished by laboratories alone must now be obtained from widely different sources. No single-handed clinical study is capable of supplying all of the evidence which most diseased conditions present. Of what benefit is it to know that a patient shows a positive Wassermann in his blood when only the most painstaking examination of the whole body, requiring special knowledge in several different branches of medicine, can estimate the amount of structural damage the disease has caused? There may have been a time when it was necessary to know only that an individual had syphilis in order to outline the treatment of that period, but the physician who, today, hangs his therapeutic armament on such a slender thread not only invites defeat of his aims, but places the future well-being of his patient in jeopardy. The practicing physician who possesses the necessary accomplishments to make a satisfactory and complete survey of such an individual is rare, but the number of members of the profession who are desirous of obtaining the information which such a survey can furnish is on the increase. For these, Group Study opens sources of information hitherto denied them, and places in their hands the necessary prerequisite to efficacious treatment.

There has been a great deal written about Group Medicine in recent years. While opinions vary as to the practicability of this type of medicine, the view is widely taken that Group Medicine does fill an obvious hiatus in the present state of medical practice. That it has any place, other than an academic one, in the handling of the common run of diseases is doubtful, and it will never replace even the moderately well-trained physician in the care of the common, well-defined diseases which daily confront the general practitioner.

But there are border-line and mixed cases, those which present disease in forms not well understood where several body systems or organs are affected with no symptom pointing directly to the organ or part involved, and which for their proper interpretation require minds trained not only in the several branches of medicine, but also experienced in the general features of medical practice.

The patients examined by the St. Luke's Group show quite well, in the multiplicity of their present and past complaints, the type of individuals to which I refer. In the one thousand cases, 683 gave a total of 1756 complaints referable to the nervous system. The incidence of these complaints was as follows: Nervousness, 494; pain, 371; depression, 189; numbness, 181; weakness, 175; paræsthesias, 90; tremor, 87; sleeplessness, 68; dreams, 56, and flushes 45. However, there were only 334 actual neurological diagnoses, and of these 224 were of uncertain organic nature. It would appear, then, that a very large proportion of the complaints referred to the nervous system were the outcome of disease elsewhere in the body.

Of the diseases of the nervous system 110 were of known organic nature. Brain tumor was diagnosed 7 times, caudal tumor 3 times, combined sclerosis 1, cerebral diplegia 3, hemiplegia 1, Parkinson's disease 1, lethargic encephalitis 2, myelitis 2, neuritis 7, peripheral neuritis 4. Syphilis involved the nervous system as C. S. syphilis 69 times, as tabes 4 times, and as paresis 3 times. In the group with a pathological foundation of unknown nature, epilepsy with deterioration was diagnosed 18 times, and epileptoid attacks without demonstrable deterioration, 18 times. There were 40 diagnoses of thoracic neuralgia, 25 of occipital neuralgia, 7 of trigeminal neuralgia, and 1 of obturator neuralgia. There were 65 cases in which a diagnosis of psychoneurosis was made

without the type being definitely stated, 6 of hysteria, 6 of anxiety neurosis, 14 of neurasthenic state, and 3 of psychasthenia. Of the insanities, 4 were diagnosed as toxic psychoses, 3 as maniac-depressive, 2 as dementia praæcox, and 1 as hypochondriasis.

That pathological conditions elsewhere in the body frequently exert their first noticeable effects upon the nervous system is well known, and we have found this fact to be true in a large proportion of our cases. With only 16 per cent of the cases with nervous symptoms showing definite disease of the nervous system, it seemed that it might be of interest to tabulate the other diagnoses noted in the 683 cases. They are as follows: Mucous colitis, 386; infected teeth, 370; infected tonsils, 295; infected prostate, 133; cholecystitis, 45; infected tubes, 12; infected sinuses, 8; arterio-sclerosis, 196; arthritis, 174; lues, 90; visceroptosis, 151; toxic cardiopathy, 28; nephritis, 25; thyrotoxicosis, 90; hypothyroidism, 14; lack of pelvic support, 25; hemorrhoids, 14; gastric ulcer, 7; duodenal ulcer, 10; lac. cervix, 10; abdominal adhesions, 5; pernicious anemia, 4.

The only generalization that I care to make at this time is concerned with the multiplicity of diagnoses. Individuals are affected differently by disease and react in accordance with certain laws not well understood, or, at least, not easily deducible in current terms. In the presence of a number of known pathological conditions, the duty of the physician would seem to be clear, and that each condition should be cleared up where possible. Sound judgment based upon experience will determine which focus of disease to attack first, since in many instances there is one primary condition which may be responsible for a number of secondary ones.

Group study has brought to our notice some facts of interest in dealing with patients showing marked neurotic tendencies. It has been our rule in the past, in those cases where the special type of neurosis could not be positively determined, to make a diagnosis of psychoneurosis. But since in many of these cases more or less definite somatic pathology could be demonstrated, this diagnosis has been recorded with diminishing frequency in the past year. I have come to feel that an individual should be observed in a state of sound physical health before being classed as a psychoneurotic.

In the sixty-five cases in which psychoneurosis was recorded there were 235 diagnoses of somatic disease or 3.6 per patient. Mucous colitis was present 41 times, infected teeth, 32 times, infected tonsils, 26 times, infected prostate, 7 times, toxic heart, 5 times. Arthritis was diagnosed in 20 cases, thyrotoxicosis in 17, arterio-sclerosis in 15, visceroptosis in 15, tuberculosis in 7, and lues in 2 cases. Various other pathological conditions occurred with less frequency.

In these days when so much misdirected effort is expended in the administration of psycho-therapy, to the exclusion of treatment for definite physical disease, the foregoing tabulation gives one food for thought.

CONCLUSIONS

1. Group study provides the opportunity for the study of disease and its effects in a measure not possible by one physician alone.
2. The method lends itself to the interpretation of disease in a small number of obscure cases.
3. In the presence of a number of pathological conditions in the same patient, due attention must be given to each in estimating the source of the presenting symptoms.
4. No attempt should be made to treat an individual as a psychoneurotic until a complete examination has been made and organic pathology removed.

1. Morris, Sir Henry, Lancet, Feb. 1, 1919.
2. Mackenzie, Sir James, British Medical Journal, Jan. 29, 1921.

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METABOLISM STUDIES IN PULMONARY TUBERCULOSIS

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This study was carried out in the summer of 1920 at the Trudeau Sanatorium at Saranac Lake, New York, with the aim of finding some rational basis for feeding in pulmonary tuberculosis. In the past this has been largely empirical, and the recent changes of policy from the use of an abundant diet to one of moderate calorie content was prompted by the clinical observation that overfed patients did not do well.

This investigation was carried out along two lines; first, a study of the calorie requirements of patients as measured by their basal metabolism, and second, a study of the creatinin output of patients in various stages of the disease and of nutrition.

The respiratory studies were carried out with the use of the Benedict portable apparatus on fifteen afebrile patients in various stages of the disease from incipient quiescent cases to the active far advanced. About half of the patients were confined to bed at the time the work was carried out, the remainder were ambulant. The experimental data are shown in Table I. The degree of pulmonary involvement is shown in column 3, and is expressed in terms of the Turban classification. The basal metabolic rates are shown in column 9. The basal heat requirements are within the limits found for normal subjects. A few determinations were made with febrile subjects, not recorded here. The effect of the fever on the metabolic rate corresponds to that in other diseases, such as typhoid fever. These results correspond with the findings of McCann and Barr, published since the present work was completed.

None of the patients showed such increase in metabolism as noted by E. Grafe in very severe progressive cases, where there was evidently a toxic breakdown of body tissue, raising the metabolism 20 to 30 per cent above normal in certain afebrile cases.

From this experimental evidence it is apparent that the afebrile tuberculosis patient requires no more calories in his diet than the normal subject. The well person at rest in bed requires no more than twenty to thirty calories per kilo-gram of body weight. Is there any object in giving the